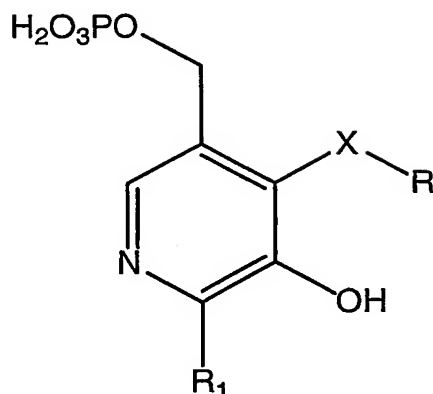


What is claimed is:

1. A compound having the formula:



wherein X represents a divalent linking moiety selected from the group $-\text{CH}=\text{N}-$ or $-\text{CH}=\text{CR}_a-$;

R is a radical selected from the group consisting of an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{15}) radical, an unsubstituted or substituted heterocyclic radical, or a radical of the formula $-\text{NR}_a-\text{X}'-\text{R}_b$, wherein X' represents a valence bond or a divalent linking moiety selected from the group of $-\text{C}(=\text{O})-$, $-\text{S}(=\text{O})_2-$ or $-(\text{CH}_2)_n-$, n being an integer from 1 to 6;

R_a represents hydrogen or an unsubstituted or substituted alkyl (C_1-C_6) radical;

R_b represents hydrogen, an unsubstituted or substituted alkyl (C₁-C₆) radical, an unsubstituted or substituted aryl (C₆-C₁₄) radical, an unsubstituted or substituted aralkyl (C₇-C₁₆) radical, an unsubstituted or substituted heterocyclic radical, an unsubstituted or substituted alicyclic (C₅-C₇) radical or a carbalkoxy radical;

R₁ represents an unsubstituted or substituted alkyl (C₁-C₆) radical;

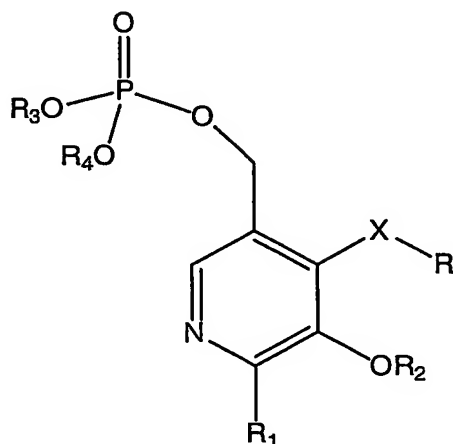
said heterocyclic radical represented by R or R_b being at least one selected from the group consisting of furan, thiophene, pyrrole, tetrazole, pyridine, piperidine, morpholine, pyrazole, pyridazine, triazole, pyrimidine, oxadiazole, thiadiazole, oxazole, isoxazole, isothiazole, and azepane; said alkyl radical substituent(s) being at least one selected from the group consisting of carboxy, hydroxy, alkoxy, amino, alkylamino, dialkylamino, thiol and alkylthio; said aryl radical substituent(s) and said aralkyl radical substituent(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, nitro, carboxy, hydroxy, hydroxyalkyl, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, perhaloalkoxy, phenylalkoxy, acyl, acyloxy, acyloxyalkyl, cyano, carbalkoxy, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, amino, alkylamino, dialkylamino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, sulfonamido,

carboxamido, and alkanoylamino; said heterocyclic radical substituent(s) and said alicyclic radical substituents(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, acyl, acyloxy, acyloxyalkyl, phenylalkoxy, hydroxy, hydroxyalkyl, alkylsulfonate, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, nitro, carboxy, carbalkoxy, or an unsubstituted and substituted aryl (C_6-C_{14}) radical; the isomeric forms of said compound and the pharmaceutically acceptable salts of said compound.

2. A pharmaceutical composition for treating or preventing viral infections, said composition comprising a compound as claimed in claim 1 in an amount effective to attenuate viral infectivity, and a pharmaceutically acceptable carrier medium.
3. A pharmaceutical composition as claimed in claim 2 further comprising at least one supplemental active agent selected from the group of interferon, a pegylated interferon, ribavirin, protease inhibitors, polymerase inhibitors, small interfering RNA compounds, anti-sense compounds, nucleotide analogs, nucleoside analogs, immunoglobulins, immunomodulators, hepatoprotectants, anti-inflammatory

agents, antibiotics, antivirals, and anti-infective compounds.

4. A compound for treating or preventing viral infection and disease associated with said infection in living hosts, said compound having the formula:



wherein X represents a divalent linking moiety selected from the group $-\text{CH}=\text{N}-$ or $-\text{CH}=\text{CR}_a-$;

R is a radical selected from the group consisting of an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{15}) radical, an unsubstituted or substituted heterocyclic radical, or a radical of the formula $-\text{NR}_a-\text{X}'-\text{R}_b$, wherein X' represents a valence bond or a divalent linking moiety selected from the group of $-\text{C}(=\text{O})-$, $-\text{S}(=\text{O})_2-$ or $-(\text{CH}_2)_n-$, n being an integer from 1 to 6;

R_a represents hydrogen or an unsubstituted or

substituted alkyl (C_1-C_6) radical;

R_b represents hydrogen, an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{16}) radical, an unsubstituted or substituted heterocyclic radical, an unsubstituted or substituted alicyclic (C_5-C_7) radical or a carbalkoxy radical;

R_1 represents an unsubstituted or substituted alkyl (C_1-C_6) radical;

said heterocyclic radical represented by R or R_b being at least one selected from the group consisting of furan, thiophene, pyrrole, tetrazole, pyridine, piperidine, morpholine, pyrazole, pyridazine, triazole, pyrimidine, oxadiazole, thiadiazole, oxazole, isoxazole, isothiazole, and azepane; said alkyl radical substituent(s) being at least one selected from the group consisting of carboxy, hydroxy, alkoxy, amino, alkylamino, dialkylamino, thiol and alkylthio; said aryl radical substituent(s) and said aralkyl radical substituent(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, nitro, carboxy, hydroxy, hydroxyalkyl, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, perhaloalkoxy, phenylalkoxy, acyl, acyloxy, acyloxyalkyl, cyano, carbalkoxy, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, amino, alkylamino, dialkylamino, aminoalkyl,

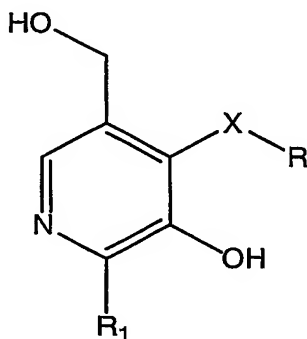
alkylaminoalkyl, dialkylaminoalkyl, sulfonamido, carboxamido, and alkanoylamino; said heterocyclic radical substituent(s) and said alicyclic radical substituents(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, acyl, acyloxy, acyloxyalkyl, phenylalkoxy, hydroxy, hydroxyalkyl, alkylsulfonate, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, nitro, carboxy, carbalkoxy, or an unsubstituted and substituted aryl (C₆-C₁₄) radical;

R₂, R₃ and R₄ may be the same or different and represent hydrogen or a radical selected from the group consisting of substituted or unsubstituted straight or branched alkyl (C₁-C₆), substituted or unsubstituted alicyclic (C₅-C₇), substituted or unsubstituted aryl (C₆-C₁₄) radicals, or an amino acid residue and with the proviso that at least one of R₂, R₃, and R₄ must be other than hydrogen; and

the isomeric forms of said compound and the pharmaceutically acceptable salts of said compound.

5. A pharmaceutical composition for treating or preventing viral infections, said composition comprising a compound as claimed in claim 4 in an amount effective to attenuate viral infectivity, and a pharmaceutically acceptable carrier medium.

6. A pharmaceutical composition as claimed in claim 5, further comprising at least one supplemental active agent selected from the group of interferon, a pegylated interferon, ribavirin, protease inhibitors, polymerase inhibitors, small interfering RNA compounds, anti-sense compounds, nucleotide analogs, nucleoside analogs, immunoglobulins, immunomodulators, hepatoprotectants, anti-inflammatory agents, antibiotics, antivirals, and anti-infective compounds.
7. A compound for treating or preventing viral infection and disease associated with said infection in living hosts, said compound having the formula:



wherein X represents a divalent linking moiety selected from the group $-CH=N-$ or $-CH=CR_a-$;

R is a radical selected from the group consisting of an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{15}) radical, an

unsubstituted or substituted heterocyclic radical, or a radical of the formula $-NR_a-X'-R_b$, wherein X' represents a valence bond or a divalent linking moiety selected from the group of $-C(=O)-$, $-S(=O)_2-$ or $-(CH_2)_n-$, n being an integer from 1 to 6;

R_a represents hydrogen or an unsubstituted or substituted alkyl (C_1-C_6) radical;

R_b represents hydrogen, an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{16}) radical, an unsubstituted or substituted heterocyclic radical, an unsubstituted or substituted alicyclic (C_5-C_7) radical or a carbalkoxy radical;

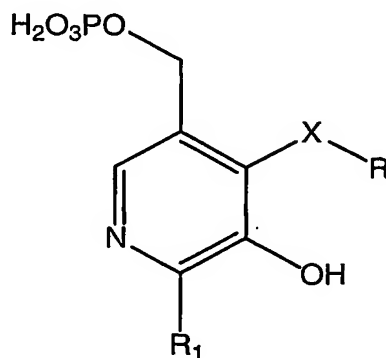
R_1 represents an unsubstituted or substituted alkyl (C_1-C_6) radical; and

said heterocyclic radical represented by R or R_b being at least one selected from the group consisting of furan, thiophene, pyrrole, tetrazole, pyridine, piperidine, morpholine, pyrazole, pyridazine, triazole, pyrimidine, oxadiazole, thiadiazole, oxazole, isoxazole, isothiazole, and azepane; said alkyl radical substituent(s) being at least one selected from the group consisting of carboxy, hydroxy, alkoxy, amino, alkylamino, dialkylamino, thiol and alkylthio; said aryl radical substituent(s) and said aralkyl radical substituent(s) being at least one selected from the group consisting of a straight or branched chain,

saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, nitro, carboxy, hydroxy, hydroxyalkyl, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, perhaloalkoxy, phenylalkoxy, acyl, acyloxy, acyloxyalkyl, cyano, carbalkoxy, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, amino, alkylamino, dialkylamino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, sulfonamido, carboxamido, and alkanoylamino; said heterocyclic radical substituent(s) and said alicyclic radical substituents(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, acyl, acyloxy, acyloxyalkyl, phenylalkoxy, hydroxy, hydroxyalkyl, alkylsulfonate, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, nitro, carboxy, carbalkoxy, or an unsubstituted and substituted aryl (C_6 - C_{14}) radical; the isomeric forms of said compound and the pharmaceutically acceptable salts of said compound.

8. A pharmaceutical composition for treating or preventing viral infections, said composition comprising a compound as claimed in claim 7 in an amount effective to attenuate viral infectivity, and a pharmaceutically acceptable carrier medium.

9. A pharmaceutical composition as claimed in claim 8 further comprising at least one supplemental active agent selected from the group of interferon, a pegylated interferon, ribavirin, protease inhibitors, polymerase inhibitors, small interfering RNA compounds, anti-sense compounds, nucleotide analogs, nucleoside analogs, immunoglobulins, immunomodulators, hepatoprotectants, anti-inflammatory agents, antibiotics, antivirals, and anti-infective compounds.
10. A method of treating or preventing infections caused by viruses of the Flaviviridae family and diseases associated with said infections in a living host having or susceptible to said infections, said method comprising administering to said living host a therapeutically effective amount of at least one compound, including the pharmaceutically acceptable salts thereof, selected from the group consisting of compounds of the formula:



(I)

wherein X represents a divalent linking moiety selected from the group $-\text{CH}=\text{N}-$ or $-\text{CH}=\text{CR}_a-$;

R is a radical selected from the group consisting of an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{15}) radical, an unsubstituted or substituted heterocyclic radical, or a radical of the formula $-\text{NR}_a-\text{X}'-\text{R}_b$, wherein X' represents a valence bond or a divalent linking moiety selected from the group of $-\text{C}(=\text{O})-$, $-\text{S}(=\text{O})_2-$ or $-(\text{CH}_2)_n-$, n being an integer from 1 to 6;

R_a represents hydrogen or an unsubstituted or substituted alkyl (C_1-C_6) radical;

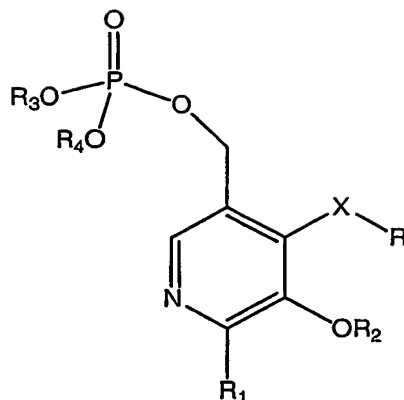
R_b represents hydrogen, an unsubstituted or substituted alkyl (C_1-C_6) radical, an unsubstituted or substituted aryl (C_6-C_{14}) radical, an unsubstituted or substituted aralkyl (C_7-C_{16}) radical, an unsubstituted or substituted heterocyclic radical, an unsubstituted or substituted alicyclic (C_5-C_7) radical or a carbalkoxy radical;

R_1 represents an unsubstituted or substituted alkyl (C_1-C_6) radical;

said heterocyclic radical represented by R or R_b being at least one selected from the group consisting of furan, thiophene, pyrrole, tetrazole, pyridine, piperidine, morpholine, pyrazole, pyridazine, triazole, pyrimidine, oxadiazole, thiadiazole, oxazole, isoxazole, isothiazole,

and azepane; said alkyl radical substituent(s) being at least one selected from the group consisting of carboxy, hydroxy, alkoxy, amino, alkylamino, dialkylamino, thiol and alkylthio; said aryl radical substituent(s) and said aralkyl radical substituent(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, nitro, carboxy, hydroxy, hydroxyalkyl, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, perhaloalkoxy, phenylalkoxy, acyl, acyloxy, acyloxyalkyl, cyano, carbalkoxy, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, amino, alkylamino, dialkylamino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, sulfonamido, carboxamido, and alkanoylamino; said heterocyclic radical substituent(s) and said alicyclic radical substituents(s) being at least one selected from the group consisting of a straight or branched chain, saturated or unsaturated aliphatic group having 1-6 carbon atoms, halogen, perhaloalkyl, monohaloalkyl, dihaloalkyl, alkoxy, acyl, acyloxy, acyloxyalkyl, phenylalkoxy, hydroxy, hydroxyalkyl, alkylsulfonate, thiol, alkylthio, alkylsulfinyl, alkylsulfonyl, nitro, carboxy, carbalkoxy, or an unsubstituted and substituted aryl (C₆-C₁₄) radical; and the isomeric forms of said compound;

a compound of the formula:



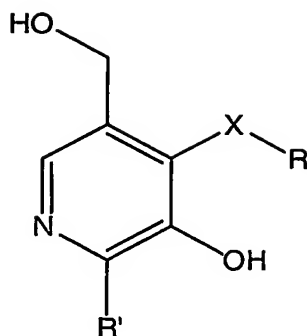
(III)

wherein X, R, and R₁ are as defined above;

R₂, R₃ and R₄ may be the same or different and represent hydrogen or a radical selected from the group consisting of substituted or unsubstituted straight or branched alkyl (C₁-C₆), substituted or unsubstituted alicyclic (C₅-C₇), substituted or unsubstituted aryl (C₆-C₁₄) radicals, or an amino acid residue and with the proviso that at least one of R₂, R₃, and R₄ must be other than hydrogen;

the isomeric forms of said compound and the pharmaceutically acceptable salts of said compound; and

a compound of the formula:



(II)

wherein X, R, and R₁ are as defined above, and the isomeric forms of said compound or a precursor of said compound.

11. A method as claimed in claim 10, wherein said compound or a precursor of said compound is administered to a living host in unit dosage form containing from about 0.001 to about 120 mg of said compound per kilogram of body weight per day, said unit dosage optionally including a pharmaceutically acceptable carrier medium.
12. A method as claimed in claim 10, wherein a precursor of said compound is administered in the form of a prodrug.
13. A method as claimed in claim 10, wherein said at least one compound or precursor of said compound is administered in combination, either concurrently or sequentially, with at least one other biologically active agent.

14. A method as claimed in claim 13, wherein said other biologically active agent is selected from the group of interferon, a pegylated interferon, ribavirin, protease inhibitors, polymerase inhibitors, small interfering RNA compounds, anti-sense compounds, nucleotide analogs, nucleoside analogs, immunoglobulins, immunomodulators, hepatoprotectants, anti-inflammatory agents, antibiotics, antivirals, and anti-infective compounds.
15. A method as claimed in claim 10, wherein at least two different compounds selected from Formula I, Formula II and Formula III, or a precursor thereof, are administered in combination, either concurrently or sequentially.
16. A method as claimed in claim 15 which further comprises administering at least one additional therapeutic agent or potentiator, selected from the group consisting of acyclovir, famcyclovir, valgancyclovir, ribavirin, amantadine, an interferon or a derivative of said therapeutic agents or potentiators.
17. A method as claimed in claim 16, wherein said additional therapeutic agent or potentiator, or derivative thereof, is administered concurrently with said at least two different compounds selected from Formula I, Formula II and Formula III, or a precursor thereof.

18. A method as claimed in claim 17, wherein said at least two different compounds selected from Formula I, Formula II and Formula III, or a precursor thereof, and said at least one additional therapeutic agent or potentiator are administered in a single dose form.
19. A method as claimed in claim 17, wherein one or more of said at least two different compounds selected from Formula I, Formula II and Formula III, or a precursor thereof, and said additional therapeutic agent or potentiator are administered in separate dosage forms.
20. A method as claimed in claim 16, wherein said additional therapeutic agent or potentiator, or derivative thereof, is administered sequentially with said at least two different compounds selected from Formula I, Formula II and Formula III, or a precursor thereof.
21. A method as claimed in claim 16, wherein said therapeutic agent or potentiator is selected from the group consisting of interferon alpha-2a, interferon alpha-2b or a polyethylene glycol-modified conjugate of interferon alpha-2a or interferon alpha-2b.
22. A method as claimed in claim 21, wherein said therapeutic agent or potentiator is interferon alpha-2b or a

polyethylene glycol-modified conjugate thereof.

23. A method as claimed in claim 15 which further comprises administering at least one inhibitor of the HCV life cycle selected from the group consisting of inhibitors of HCV cell attachment or virus entry, inhibitors of HCV translation, inhibitors of HCV RNA transcription or replication, inhibitors of HCV maturation, inhibitors of assembly or virus release or inhibitors of HCV enzyme activities.
24. A method as claimed in claim 23, wherein said inhibitors of HCV enzyme activities are selected from the group consisting of inhibitors of HCV nucleotidyl transfrase, HCV helicase, HCV protease or HCV polymerase.
25. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered orally.
26. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered rectally.
27. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered

parenterally.

28. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered intracisternally.
29. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered intravaginally.
30. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered intraperitoneally.
31. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered locally.
32. A method as claimed in claim 10, wherein said at least one compound or a precursor of said compound is administered by inhalation.
33. A method as claimed in claim 10, wherein said viruses of the Flaviviridae family are selected from the group consisting of viruses of the hepacivirus genus, viruses of the pestivirus genus, viruses of the flavivirus genus and

viruses unassigned to particular genera within the Flaviviridae family.

34. A method as claimed in claim 33, wherein said at least one compound or a precursor of said compound is administered to living hosts in unit dosage form containing about .001 to about 120 mg of said compound per kilogram of body weight per day.
35. A method as claimed in claim 33, wherein a precursor of said compound is administered in the form of a prodrug.